

PATENT

Serial No. 09/506,640

Attorney Docket No. 1999P07475US01 (1009-023)

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) A method comprising the steps of:

for a specific instance associated with a programmable logic controller comprising a first operating system, wherein said programmable logic controller is communicatively coupled to a server running under a second operating system on a personal computer:

determining that said specific instance is not registered with said second operating system and that said specific instance is already running under said first operating system; and

utilizing a moniker, automatically registering said specific instance with said second operating system, such that said specific instance, is accessible by said server by checking a running object table of said second operating system.

2. (Previously Presented) The method according to claim 1, wherein said step of registering does not instantiate objects that are not running such that a dormant programmable logic controller is not erroneously activated.

3. (Previously Presented) The method according to claim 1, further comprising: remotely coupling said programmable logic controller to said personal computer.

4. (Previously Presented) The method according to claim 3, wherein said step of remotely coupling couples said programmable logic controller to said personal computer over the internet.

5. (Previously presented) The method according to claim 1, further comprising the step of obtaining a name of an object associated with said specific instance from a memory location

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allocated for said programmable logic controller.

6. (Previously Presented) The method according to claim 1, further comprising the step of parsing said moniker to generate a parsed display name.

7. (Original) The method according to claim 6, further comprising the step of creating a pointer moniker using said parsed display name.

8. (Original) The method of claim 7, further comprising the step of binding said pointer moniker to said server.

9. (Original) The method of claim 7, further comprising the step of creating an item moniker using a portion of said parsed display name to the right of a part corresponding to said pointer moniker.

10. (Original) The method of claim 6, further comprising the step of binding said item moniker to said server.

11. (Original) The method of claim 6, further comprising the step of recursively creating item monikers for items.

12. (Previously Presented) The method of claim 6, further comprising binding a leftmost portion of said parsed display name to said server.

13. (Previously Presented) A method comprising the steps of:
for a specific instance of an object associated with a first operating system, wherein said

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specific instance is not registered with a second operating system such that a server running under said second operating system is not able to normally access said specific instance:

 determining that said specific instance is not registered in a running object table of said second operating system and that said specific instance is already running under said first operating system; and

 utilizing a moniker, registering said specific instance with said second operating system such that said specific instance of said object, that was previously not registered with said second operating system such that said server was not able to normally access said specific instance, is accessible by said server by checking said running object table of said second operating system.

14. (Original) The method of claim 13, further comprising the step of converting a program ID to obtain a class ID of said specific instance.

15. (Previously Presented) The method of claim 14, further comprising the step of parsing said moniker to obtain a parsed moniker string.

16. (Original) The method of claim 15, further comprising the step of creating a pointer moniker to said specific instance using said parsed moniker string.

17. (Original) The method of claim 16, further comprising the step of binding said pointer moniker to said server.

18. (Previously Presented) The method of claim 17, further comprising the step of linking to said specific instance using said pointer moniker.

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19. (Original) The method of claim 13, wherein said specific instance is associated with a programmable logic controller, wherein said step of registering registers said specific instance without changing a tagfile server name.

20. (Original) The method of claim 19, further comprising the step of binding a pointer moniker of said specific instance to a client.

21. (Previously Presented) An apparatus comprising:
a memory adapted to store a specific instance, said memory associated with a programmable logic controller that comprises a first operating system; and
a processor adapted to:

register said specific instance with said first operating system; and
via a moniker, provide access to said specific instance via a personal computer comprising a second operating system such that said specific instance of said object is accessible by a server associated with said personal computer by accessing a running objects table of said second operating system.

22. (Previously Presented) The apparatus according to claim 21, further comprising a connection for remotely coupling said programmable logic controller to said personal computer.

23. (Original) The apparatus according to claim 22, wherein said connection is an internet connection.

24. (Original) The apparatus according to claim 22, wherein said connection is a Universal Serial Bus connection.

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25. (Original) The apparatus of claim 22, wherein said connection is a communications (COM) port connection.

26. (Cancelled)

27. (Previously Presented) The apparatus of claim 21, further comprising a display for displaying signals associated with said specific instance.

28. (Previously Presented) The apparatus of claim 27, wherein said processor processes said signals associated with said specific instance to transform said signals into signals of a predetermined format defined by said server for display on said display.

29. (Cancelled)

30. (Previously Presented) The apparatus of claim 21, wherein said processor is adapted to establish a remote connection to couple said processor to said personal computer.

31. (Original) The apparatus of claim 21, further comprising a plurality of programmable logic controllers coupled to said processor.

32. (Original) The apparatus according to claim 31, further comprising a connection between said plurality of programmable logic controllers thereby forming a master-slave relationship in which a master programmable logic controller directs control of machinery coupled to a slave programmable logic controller.

33. (Previously Presented) The apparatus of claim 21, further comprising firmware for

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providing an interface between said processor and said personal computer.

34. (Original) The apparatus of claim 33, wherein said firmware provides identification information of said programmable logic controller that is used by the processor for registering said specific instance.

35. (Previously Presented) The apparatus of claim 33, wherein said firmware is on a pluggable card.

36. (Previously Presented) An apparatus comprising:
memory means adapted to store a specific instance, said memory associated with a programmable logic controller that comprises a first operating system; and
processor means adapted to:
register said specific instance with said first operating system; and
via a moniker, provide access to said specific instance via a personal computer comprising a second operating system such that said specific instance of said object is accessible by a server associated with said personal computer by accessing a running objects table of said second operating system.

37. (Previously Presented) The apparatus according to claim 36, further comprising connection means for remotely coupling said programmable logic controller to said personal computer.

38. (Original) The apparatus according to claim 37, wherein said connection means is a means to connect to the internet.

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39. (Original) The apparatus according to claim 37, wherein said connection means is a means to connect to a Universal Serial Bus connection.

40. (Original) The apparatus of claim 36, wherein said connection means is a means to connect to a communications (COM) port.

41. (Cancelled)

42. (Previously Presented) The apparatus of claim 36, further comprising display means for displaying signals associated with said specific instance.

43. (Previously Presented) The apparatus of claim 42, wherein said processor means processes said signals associated with said specific instance to transform said signals into signals of a predetermined format defined by said server for display on said display.

44. (Cancelled)

45. (Previously Presented) The apparatus of claim 44, wherein said processor means establishes a remote connection to couple said personal computer to said programmable logic controller.

46. (Original) The apparatus of claim 36, further comprising a plurality of programmable logic controllers coupled to said processor means.

47. (Previously Presented) The apparatus according to claim 46, further comprising a connection means for providing a connection between said plurality of programmable logic

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controllers thereby forming a master-slave relationship in which a master programmable logic controller directs control of machinery coupled to a slave programmable logic controller.

48. (Previously Presented) The apparatus of claim 36, further comprising firmware means for providing an interface between said processor means and said personal computer.

49. (Original) The apparatus of claim 48, wherein said firmware means provides identification information of said programmable logic controller that is used by the processor means for registering said specific instance.

50. (Previously Presented) The apparatus of claim 47, wherein said firmware means is on a pluggable card.

51. (Previously Presented) An article of manufacture encoded with processor instructions for activities comprising:

for a specific instance of an object associated with a first operating system, wherein said specific instance is not registered with said second operating system such that a server of said second operating system is not able to normally access said specific instance;

determining that said specific instance is not registered in a running object table of said second operating system and that said specific instance is already running under said first operating system; and

utilizing a moniker, registering said specific instance with said second operating system such that said specific instance of said object, that was previously not registered with said second operating system such that said server was not able to normally access said specific instance, is accessible by said server by checking said running object table of said second operating system.

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52. (Previously Presented) The article of manufacture of claim 51, wherein the processor instructions encoded on said article of manufacture further comprises the activity of converting a program ID to obtain a class ID of said specific instance.

53. (Previously Presented) The article of manufacture of claim 52, wherein the processor instructions encoded on said article of manufacture further comprises the activity of parsing said moniker to obtain a parsed moniker string.

54. (Previously Presented) The article of manufacture of claim 53, wherein the processor instructions encoded on said article of manufacture further comprises the activity of creating a pointer moniker to said specific instance using said parsed moniker string.

55. (Previously Presented) The article of manufacture of claim 54, wherein the processor instructions encoded on said article of manufacture further comprises the activity of binding said pointer moniker to said server.

56. (Previously Presented) The article of manufacture of claim 55, wherein the processor instructions encoded on said article of manufacture further comprises the activity of linking to said specific instance using said pointer moniker.

57. (Previously Presented) The article of manufacture of claim 52, wherein said specific instance is associated with a programmable logic controller, wherein said activity of registering registers said specific instance without changing a tagfile server name.

58. (Previously Presented) The article of manufacture of claim 57, wherein the processor

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instructions encoded on said article of manufacture further comprises the activity of binding a pointer moniker of said specific instance to a client.

59. (Currently Amended) The method of claim-211, further comprising:
registering said specific instance with said second operating system with a user-defined name.

60. (Currently Amended) The method of claim-211, further comprising:
providing an interface to input/output points, wherein said programmable logic controller is adapted to provide data from said input/output points to said personal computer

61. (Previously Presented) The apparatus of claim 36, wherein said processor is adapted to provide access to said specific instance via said second operating system with a user-defined name.

62. (Previously Presented) The apparatus of claim 36, further comprising:
an interface means to input/output points, wherein said programmable logic controller is adapted to provide data from said input/output points via said specific instance to said personal computer.